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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/581,342	10/20/2006	Stephane Bastide	BJS-5006-10	6227

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ARLINGTON, VA 22203

EXAMINER
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HYUN, PAUL SANG HWA

ART UNIT	PAPER NUMBER
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1772

MAIL DATE	DELIVERY MODE
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10/18/2010

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/581,342	<b>Applicant(s)</b> BASTIDE ET AL.	
	<b>Examiner</b> PAUL S. HYUN	<b>Art Unit</b> 1772	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 02 August 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-8 and 10-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-8 and 10-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>08/02/10</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Amendment***

The amendment filed on August 2, 2010 has been acknowledged. Claims 1, 2, 4-8 and 10-17 are currently pending. Applicant amended claims 1, 2, 4-8, and 10-15 and added new claims 16 and 17.

The amendment to the Specification filed by Applicant to correct an inadvertent error in translation has been acknowledged.

The IDS filed by Applicant has been acknowledged.

The claim rejections under 35 USC section 112 cited in the previous Office action have been withdrawn in light of the amendment.

### ***Claim Objections***

Claim 16 is objected to because of the following informalities:

The limitation “negulizer” is misspelled.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims **1, 2, 4-8 and 9-17** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation “precursor of formula (II) (A)<sub>c</sub>M(X)<sub>d</sub>...” Based on the claim language, it is unclear whether formula (II) refers to the formula of the precursor,

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or whether formula (II) refers to the eventual compound of the precursor. Based on the Specification, formula (II) refers to the formula of the precursor. It is suggested that the limitation be rewritten to “precursor having the formula (II)  $(A)_cM(X)_d$ ”.

Claim 15 recites the formula of the claimed nanoparticle  $(MX_2)$ . The claim also recites the elements that can represent M, which includes metals from groups III, IV and V of the periodic table. A nanoparticle having the claimed formula cannot be formed using metal from groups III, IV and V of the periodic table since X is limited to oxygen, sulfur, selenium tellurium.

Claim 15 is also indefinite because the claim recites the limitation “obtainable by the method of claim 1”. It is unclear whether the limitation is intended to be limiting. In other words, it is unclear whether the claimed nanoparticle must be obtained by the method recited in claim 1 or whether it can be obtained by another method.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim **15** is rejected under 35 U.S.C. 102(e) as being anticipated by Suzuki et al. (US 2003/0191222 A1).

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Suzuki et al. disclose metal oxide (e.g. zirconium oxide, see [0048]) particles having an average size of 5 to 50 nm (see [0054]), wherein the particles have a rectangular parallelepiped shape (see [0053]).

It should be noted that the patentability of the claim is based on the nanoparticles themselves, not the method by which they are produced. In this case, the particles disclosed by Suzuki et al. comprise all the recited elements and properties.

***Allowable Subject Matter***

Claims 1, 2, 4-8 and 9-14, 16 and 17 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

The following is a statement of reasons for the indication of allowable subject matter:

Laine et al. (US 5,958,361) disclose a method of synthesizing metal oxide crystalline nanoparticles by means of spray pyrolysis (see Abstract). The method comprises the steps of forming a solution comprising a metal oxide precursor (e.g. glycolato polymetallooxane) dissolved in a polar solvent (e.g. ethanol) (see lines 4-10, col. 11), aerosolizing the solution, conveying the aerosol to a furnace using nitrogen gas (see lines 30-35, col. 16), and converting the aerosol to crystalline nanoparticles having sizes ranging between 10-100 nm (see line 36, col. 17). The metal of the metal oxide can be Group III metals such as gallium and indium; Group IV metals such as tin and germanium; or transition metals such as hafnium, vanadium, cobalt, tungsten and

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chromium (see lines 11-25, col. 9). However, Laine et al. do not disclose the use of a precursor having the claimed formula  $(A)_cM(X)_d$  to form metal chalcogenides.

### ***Response to Arguments***

Applicant's arguments with respect to claim 15 has been considered but it is moot in view of the new ground of rejection. The amendment necessitated the new ground of rejection.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PAUL S. HYUN whose telephone number is (571)272-8559. The examiner can normally be reached on Monday-Friday 8AM-4:30PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on (571)-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Paul S Hyun/  
Examiner, Art Unit 1772

/In Suk Bullock/  
Supervisory Patent Examiner, Art Unit 1772